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Effectiveness of Satellite Programs for
Technical Updating of Vocational Education Teachers

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Abstract: This article describes the planning, implementation, development and evaluation of a funded project that used distance education technologies for technical updating of vocational education teachers in Florida. The project was completed during the summer of 1992. Eight of nine public universities in Florida worked in collaboration on the project. Delivery of 12, two-hour live satellite programs was completed within a four-week period with participation of teachers from throughout Florida. Analysis of responses from participants in the workshops depicts acceptance of the use of distance education technologies for technical updating .

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This project, funded with 1991-92 Carl D. Perkins federal **support**, had three goals:

1. To use a variety of distance learning technologies that provide **teachers** with technical skills for updating **specified** vocational **program** areas.

2. To study the effectiveness and efficiency of **interactive** versus non-interactive formats for delivering distance learning.

3. To promote cooperation and teaming among academic and vocational teacher educators in Florida's state universities.

The above list was the priority order as stated in the **grant**; however, for this article, the goals will be discussed in a **different** order.

Goal **3**: Promotion of Teaming

From the perspective of promoting **cooperation** and teaming among university teacher educators, the project was a **definite** success. Within a short amount of time (six weeks from funding to completion), the **vocational** teacher educators developed and delivered 12, **two**-hour interactive satellite programs for Florida's vocational education teachers. Eight of the nine public universities in the state participated in the project, with seven presenting programs and one providing outside evaluation.

This **cooperation** was not instantaneous. During the March 1992 meeting of the Florida Association of Vocational Teacher Educators (**FAVTE**), the project was initially discussed. A team approach was proposed with the suggestion that participating universities develop programs based upon results of a needs assessment conducted in 1991 in consultation with personnel from the Division of Vocational, Adult and Community Education (**DVACE**). The DVACE representative requested that faculty at **all** nine public universities in Florida be involved as either program developers or as outside third party evaluators. During that same

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time, a follow-up discussion about the proposed project was held with the State Director for the Division of Vocational, **Adult** and Community Education (**DVACE**). Ultimately, a **six-**page **pre-proposal** was delivered for consideration.

Between March and April, **further** discussions occurred between the coordinating university contact and a representative of the DVACE, with a request for proposal sent out in late April. The project was formally awarded at the end of April. Acceptance by eight of the nine universities was **achieved**, with one declining. **Sub-contracts** were developed within two days for the participants, sent out on a Friday, **returned** by the following Monday and delivered overnight to the **DVACE** by Tuesday. The time constraints were enormous.

By mid-May, the **final** project was funded. Payment for sub-contracts among the Sponsored Research Divisions was achieved by the end of the grant period, but not without some challenges. These were primarily due to time **constraints**, policies for **expenditures** and preferred contract language. A high level of **trust** had to exist for these universities to initiate the project with an intent to pay transfer monies as soon as possible, but nearer to June 30, the end of the fiscal year.

To prepare the university teacher educators for teaching via satellite, a special workshop based on Teaching Through Interactive Television: A Practical Introduction to Business Television and Distance Education (Ostendorf, 1989) was offered and attended by representatives of each of the seven universities and the DVACE. Although not a requirement for funding of the project, this intensive, two-day, hands-on, live studio workshop was critical for the success of planning and on-camera delivery by the teacher educators. The participants, with a few exceptions, were novices at distance education. Therefore, this project was a test of the extent to which the universities would work together. In order to follow up the workshop and maintain communications and positive relations with

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the DVACE staff, reference copies of the Ostendorf book and a resource notebook were provided to each Occupational Program Director (OPD) and the State Director at the DVACE.

Concurrent with workshop planning and fiscal arrangements, topics were agreed upon between each OPD and targeted university. A brochure containing program titles and related information was developed by mid-May, and over 800 brochures were mailed to school districts, community colleges, vocational centers, and universities, as well as to DVACE staff for additional distribution. Through additional contacts at the Florida Department of Education, Bureau of Educational Technology, and the state satellite staff of SUNSTAR, additional brochures were sent to the designated downlink sites. Program notices also were included in the Monday Reoort (a statewide weekly educational newsletter) and on the Florida Information Resource Network (FIRN), a statewide electronic mail network of over 8,000 participants. Local newspaper articles described the project as well.

The next task was to reserve satellite time using "C" Band to compensate for summer lightning storms. A special rate for the 24 contact hours was confirmed through AT&T SKYNET Services with each university-based program billed for its respective hours. High quality speaker phones and microphones were necessities for the audio-interactive sites. Speaker phones and microphones manufactured by A.T. Products were the sole products selected. The Director of Marketing and President of A.T. Products also attended the Ostendorf training workshop and provided on-site, hands-on training with the equipment and a toll-free phone number.

Weekly conference calls were scheduled using an existing telephone bridge at one of the participating universities, and representatives from all university-based program participated in most sessions. Agendas were faxed to each site prior to the conference. Representatives

Hudson et al.: Satellite Programs for Technical Updating of Education Teachers from AT&T SKYNET, SUNSTAR, **A.T.** Products, and the DVACE **were** on-line as needed for planning and problem-solving prior to **program** delivery and **for** feedback after each program. In this approach, teaming and collaboration were **enhanced**.

Goal 1: Use a Variety of Techniques

Within the 12 programs, several different learning technologies **were** used. A partial **list** is included below:

*Taped Roll-In and Live Interviews	Demonstration of Procedure
Overheads, Paper, Slides, Flip Charts	Group Discussions
Panel	Brainstorming
*Taped Roll-In Field Trip	S u r v e y
Role Playing	Handouts
Lecture	*Faxed Questions
Participant Questions in Studio	*Character Generations
*Still Store	*Chromakey
Computer Monitor Access	Industry Representatives
*Participant Questions via Audio Bridge	

Those denoted by asterisks (*) are used specifically **in** distance education programs. **Many** of these techniques are also used in traditional classrooms and were effective in these multiple site satellite programs.

Goal 2: Interactivity of Programs

Interactivity y is important whether in a traditional classroom or laboratory, or when using multiple sites with satellite and telephone technologies. One goal was to compare the interactive (telephone bridge, 800 number, and faxed questions) sites to the **non-interactive**

questionnaire that elicited feedback on each program. The following **summary** data is excerpted from the project final **report** (Hudson, 1992) with input **from** the outside evaluator.

Demographics

The evaluation questionnaire was **structured** so that answers to the **first three** items **identified** the **specific** program attended by the subject; items four and five identified the subject's vocational area, and items six through eight identified the subject's school setting, work title, and work status. Item nine asked whether the site used the telephone bridge for interaction. Items 10 through 18 of the evaluation questionnaire requested opinions **from** the subjects concerning various ways of interpreting the success of the program they experienced. The opinion items **are** most relevant for the evaluation of the project.

Findings

A total of 205 subjects returned **questionnaires**, although some subjects failed to respond to **all** items. Participants represented **all** eight program areas. A summary of the number of **participants** attending each **program** and as well as the date of presentation is included as Table 1. A total of 12 workshops were offered addressing eight program areas: agribusiness, business (2), health (2), home economics, industrial (2), marketing, public service, and technology (2).

Items 10 through 18 addressed the effectiveness of distance learning by soliciting opinions from the participants. Item 10 asked if they achieved the goal of technical updating for the topic listed. Of the 192 participants who responded to this item, 130 (68%) agreed (94) or strongly agreed (36), 41 (21%) were neutral, and 21 (11 %) disagreed (16) **or** strongly disagreed (5). Thirteen participants did not respond to this item. Item 11

Table 1

Frequency Distribution for Specific Program (Items 1-3)

Program	Frequency	Percent
Agribusiness (6/23)	22	10.7
Business (6/17)	22	10.7
Business (7/2)	11	5.4
Health (6/24)	10	4.9
Health (7/1)	8	3.9
Home Economics (6/25)	42	20.5
Industrial (6/8)	28	13.7
Industrial (6/30)	9	4.4
Marketing (6/29)	14	6.8
Public Service (6/24)	8	3.9
Technology (6/23)	9	4.4
Technology (6/25)	21	10.2
None of the above	<u>1</u>	- 5
	205	100.0
Total		

questioned the relevancy of program materials to the presentations. Of the 194 responses, 139 (72 %) agreed (88) or strongly agreed (51), 47 (24%) were neutral, and 8 (4%) disagreed (4) or strongly disagreed (4). Eleven participants did not respond. Item 12 asked if the program moderator generated enthusiasm during the session. Responses numbered 196. Of

these, 140 (71 %) agreed (84) or strongly agreed (56), 41 (21%) **were** neutral, and 16 (8%) disagreed (9) or strongly disagreed (7). Eight participants did not respond to this question. The program presenters' instructional credibility was questioned in item 13, which received 196 responses. Of these, 178 (91%) agreed (99) or strongly_ (79), 17 (9%) **were** neutral, and less than 1 % disagreed (0) or strongly **disagreed** (1). **Nine** participants did not respond. **In** item 14, participants were asked if technology generally worked well at their site. For this item, **there** were 197 responses. Of these, 144 (73%) agreed (94) or strongly agreed (50), 24 (12%) were neutral, and 29 (15%) disagreed (26) or strongly **disagreed** (3). Eight **participants** did not respond to this item. The quality and quantity of interaction between participants and presenters was questioned in item 15, to which 194 responses were received. Of these responses, 163 (84%) agreed (97) or strongly agreed (66), 19 (10%) were neutral, and 12 (6%) disagreed (9) or strongly **disagreed** (3). Eleven participants did not respond. Item 16 asked if the program lent itself to the use of satellite teleconferencing technology. Of the 195 responses, 163 (84%) agreed (103) or strongly **agreed** (60), **17** (9%) were **neutral**, 15 (8%) disagreed (13) or strongly disagreed (2), and 10 did not respond. In item 17, participants answered whether or not they would participate **in** future satellite teleconference activities. On this item, there were 197 responses, of which 164 (83%) agreed (97) or strongly agreed (67), 19 (10%) were neutral, 14 (**7%**) disagreed (12) or strongly disagreed (2), **and** 8 did not respond. Finally, item 18 asked if participants would encourage others to enroll in future satellite teleconferencing activities. Of the 197 responses to this item, 162 (82%) agreed (92) or strongly agreed (70), 25 (13%) were neutral, 10 (5%) disagreed (5) or strongly disagreed (5), and 8 **did** not reply. These items are summarized in Table 2.

Table 2

Response Frequencies for Nine Opinion Items

Item	SA	A	N	D	SD	NR
10	36	94	41	16	5	13
11	51	88	47	4	4	11
12	56	84	41	9	7	8
13	79	99	17	0	1	9
14	50	94	24	26	3	8
15	66	97	19	9	3	11
16	60	103	17	13	2	10
17	67	97	19	12	2	8
18	70	92	25	5	5	8

Discussion

In looking at items 10-18, it was generally found that the distance technology worked well. Participants and presenters were able to interact with no difficulty, and presenters' instructional credibility was perceived highly. Satellite teleconferencing technology seemed to lend itself to the topics presented, and the program materials seemed relevant to the presentations. The responses show that the majority of **respondents**, even if participating for the first time, agreed that they would participate in future satellite teleconferencing activities. Such strong response strongly advocates future workshops through this medium.

Goal 1 was met by using 18 different strategies to enhance technical **skills** updating of teachers for **specified vocational** program areas. Seven of **these skills are** used specifically in long distance education. Goal 2 compared **interactive** and non-interactive **formats to study** the effectiveness and **efficiency** of delivering **distance** learning. There were no **significant** differences between interactive **and** non-interactive sites. Goal 3 promoted **cooperation and teaming** among academic and vocational teacher educators. Eight of the nine public **universities participated**. Seven presented programs while the other served as an outside evaluator. The program evaluation revealed that cooperation and teaming did take place between eight universities. Subjects were very positive about their technical updating experience. Analysis of responses from **participants** in the workshops depicts acceptance of long distance educational technologies for technical updating of teachers. Several universities worked together to produce quality programs on a **common project** in a short amount of time. The positive reaction from teachers overall clearly denotes that the program can be evaluated as a success.

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